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**Taming Message Passing: Efficient Method Look-Up for  
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Jan Vitek, R. Nigel Horspool  
Lecture Notes in Computer Science

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**Abstract:** Method look-up for dynamically typed object-oriented languages, such as SMALLTALK-80 or OBJECTIVE-C, is usually implemented by a cached inheritance search. Unfortunately, this technique is slow. A selector-indexed dispatch table implementation speeds up messages to within 10% of the speed of a statically typed language such as C++. We present a fast technique for generating compact selector-indexed dispatch tables. ([Update](#))

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...to the method. 3.3. 5 Compact selector indexed dispatch tables (CT) The third table compaction method, proposed by Vitek and Horspool [128], unlike the two previous methods, generates selector specific dispatch code sequences. The technique separates selectors into two...

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A Framework For Inheritance Management and Method Dispatch - Wade Holst And (1999) ([Correct](#))  
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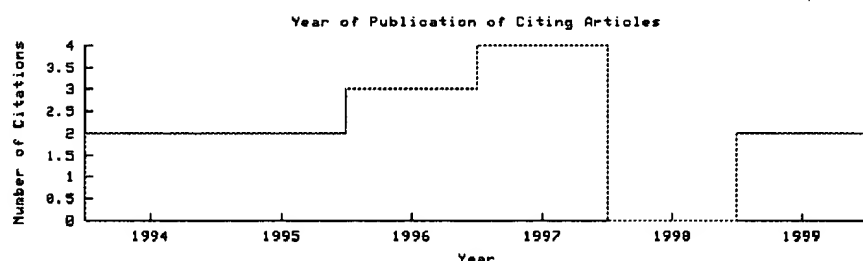
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**Publications**

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S14 2	0	S141 and ((access near2 (control right)) or ((private with public) with (violation access\$5)) )	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 11:31
S14 3	3	S141 and ((access near2 (control right)) or ((private or public) with (violation access\$5)) )	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:01
S14 5	3	(dynamical\$4 near typed) and (virtual near3 method).ab.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:00
S14 6	0	((@ad<="20011012" or @rlad<="20011012") not Allison. in. and S142	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:00

S14 7	15	(dynamical\$4 near link\$6) and (virtual near3 method).ab.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:00
S14 8	6	((@ad<="20011012" or @rlad<="20011012") not Allison. in. and S147	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:36
S14 9	3	S148 and ((access near2 (control right violat\$4 permi\$6 exception)) or ((private or public) with member) )	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:35
S15 0	13	(dynamically near typed) and ( virtual near2 method)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 12:36
S15 1	10	((@ad<="20011012" or @rlad<="20011012") not Allison. in. and S150	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 13:36
S15 2	3	S151 and (access with exception)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:09
S15 3	0	(class adj load\$5) and jvm and (virtual near method) and ((late dynamic) near8 (link\$4 binding)) and (dynamic\$5 near type\$2) and ((private public) near4 (access member method))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:12
S15 4	27	(class adj load\$5) and jvm and (virtual near method) and ((late dynamic) near8 (link\$4 binding))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:12
S15 5	0	IllegalAccessException and (dynamic\$5 near type\$2) and ((private public) near4 (access member method))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:12
S15 6	9	(access near3 Exception) and (dynamic\$5 near type\$2) and ((private public) near4 (access member method))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:13

S15 7	19	(@ad<="20011012" or @rlad<="20011012") not Allison. in. and S154	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:13
S15 8	9	(@ad<="20011012" or @rlad<="20011012") not Allison. in. and S156	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/11 15:13
S15 9	4	("6678745" or "6704924").pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 10:40
S16 0	1	S159 and ((late runtime dynamic) with (bind\$5 link\$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 10:58
S16 1	2	"6507946".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:16
S16 2	28	(dynamic\$5 with typed).ab.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:00
S16 3	12	(@ad<="20011012" or @rlad<="20011012") not Allison. in. and S162	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:00

S16 4	29	(US-20020023257-\$ or US-20020120940-\$ or US-20020138727-\$ or US-20040154008-\$ or US-20050149914-\$ or US-20050172302-\$).did. or (US-5339430-\$ or US-5515536-\$ or US-5579518-\$ or US-5613120-\$ or US-5692195-\$ or US-5794044-\$ or US-5802291-\$ or US-5872973-\$ or US-5903758-\$ or US-5911068-\$ or US-6041179-\$ or US-6063128-\$ or US-6085035-\$ or US-6182282-\$ or US-6263414-\$ or US-6385660-\$ or US-6507946-\$ or US-6519690-\$ or US-6560774-\$ or US-6704927-\$ or US-6738968-\$ or US-6766521-\$).did. or (WO-200046670-\$).did.	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/12 11:02
S16 5	19	S164 and (dynamic\$5 with (type\$2 bind\$4 link\$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:04
S16 6	18	S164 and (runtime\$2 with (type\$2 bind\$4 link\$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:04
S16 7	20	S165 or S166 and ((access near5 (exception violation)) or (classloader and (private same public)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:06
S16 8	14	S167 not microsystems.as.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:26
S16 9	4	S168 and (access with (permi\$6 exception violation))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:56
S17 0	9	S164 and (runtime with (bind\$4 link\$4)) and ( virtual near4 (function method))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 11:57

S17 1	1	S167 and Chan.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:27
S17 2	862	(Chan.in. Yasumatsu.in.) and (message (protected near4 class))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:29
S17 3	29	S172 and ((runtime dynamic\$5) with ( binding link\$4 resol\$6))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:30
S17 4	5	S173 and (object same class) and ( C++ Smalltalk)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:31
S17 5	2	(US-20050172302-\$).did. or (US-5579518-\$).did.	US-PGPUB; USPAT	OR	ON	2006/01/12 13:31
S17 6	0	S175 and (virtual near method)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:32
S17 7	1	S175 and (virtual)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:33
S17 8	0	Objective and S177	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:33
S17 9	0	Smalltalk and S177	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:34
S18 0	3	Smalltalk and S174	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 13:34

S18 1	29	(US-20020023257-\$ or US-20020120940-\$ or US-20020138727-\$ or US-20040154008-\$ or US-20050149914-\$ or US-20050172302-\$).did. or (US-5339430-\$ or US-5515536-\$ or US-5579518-\$ or US-5613120-\$ or US-5692195-\$ or US-5794044-\$ or US-5802291-\$ or US-5872973-\$ or US-5903758-\$ or US-5911068-\$ or US-6041179-\$ or US-6063128-\$ or US-6085035-\$ or US-6182282-\$ or US-6263414-\$ or US-6385660-\$ or US-6507946-\$ or US-6519690-\$ or US-6560774-\$ or US-6704927-\$ or US-6738968-\$ or US-6766521-\$).did. or (WO-200046670-\$).did.	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/12 14:01
S18 2	18	S181 and (C++ and virtual)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 14:02
S18 3	7	S182 and message	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/01/12 14:17